wrightii, Cyanocephalus cyanocephalus, and *Hylocichla fuscescens salicicola.*

The Canadian Zone, which covers the middle mountain slopes and the highest foothill ranges, occurring at altitudes of from 7,500 to 10,500 feet, is the boreal forest belt of spruce, fir, lodgepole pine, and aspen; and is furthermore delimited by such mammals as *Alces americanus shirasi, Glaucomys sabrinus bangsi, Phenacomys orophilus, Evotomys gapperi galei,* and *Lepus americanus americanus;* with such birds as *Charitonetta albeola, Nuttallornis borealis, Melospiza lincolnii lincolnii, and Sitta canadensis.*

The Hudsonian Zone, which is a narrow belt covering the timberline region, and ranging from altitudes of 9,000 to 11,200 feet, is marked chiefly by the white-barked pine, dwarfed spruce and fir; together with such mammals as *Ovis canadensis canadensis, Eutamias oreoccetes,* and *Ochotona uinta;* and such birds as *Nucifraga columbiana* and *Pinicola enucleator montana.*

The Arctic-Alpine Zone, which occupies the mountain crests and the portion of the peaks above timberline, in places from 9,500 to 13,785 feet altitude (the summit of the highest mountain in the State), is a treeless area, the vegetation of which is limited to low bushes like *Salix nivalis,* and other humble plants like *Dryas octopetala* and *Poa arctica,* and is the home of such breeding birds as *Lagopus leucurus altipetens, Leucosticte australis, Leucosticte atrata* and *Anthus spinoletta rubescens.*

The term "Upper Sonoran" as used here is really not a zone in the strict sense, and would be better called "Upper Austral," of which zone it is the western arid division. Although no mention is made of the fact, the so-called "Arctic-Alpine Zone" is really a part of the Arctic Region, which, in North America, covers the tundra area of the northern part of the continent and the mountain tops above timberline in the more southern parts of Canada and in the United States; and the four other zones of Wyoming belong to the Nearctic Region.

Following the main part of this bulletin is a well-annotated list of the conspicuous trees and shrubs of Wyoming that are of importance in the delimitation of life zones. The numerous half-tones illustrate the different types of physiography and the ecological relations of the vegetation. Of particular interest are the pictures of *Picea engelmanni* and *Pipus albicaulis* at timberline, which show the dwarfing and distorting effects of the severe climatic conditions under which they here live.

The author's careful and detailed treatment of this extremely interesting and intricate subject leaves little to be desired; and it is a matter of great regret that he could not have lived to carry his investigations into other parts of the United States.

Harry C. Oberholser

SPECIAL ARTICLES

A CHART OF ORGANIC CHEMISTRY, ALIPHATIC SERIES

In connection with the elementary organic chemistry course given at the university I deemed it advisable to have charts made to be placed in the lecture and laboratory rooms, where students may consult them at all times. In order to emphasize certain endings, type groups, etc., red lettering was used.

The chart, which is 92″ x 55″, is reproduced on the preceding page.

An analogous chart of the aromatic series is in course of preparation.

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